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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS

SUMMARY OF FOREST INSECT CONDITIONS ON THE SIERRA NATIONAL FOREST AND ADJACENT PRIVATE LANDS

Season of 1947

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SUMMARY OF FOREST INSECT CONDITIONS ON THE SIERRA NATIONAL FOREST AND ADJACENT PRIVATE LANDS SEASON OF 1947

By George R. Struble

The survey was carried on between September 26 and October 4, in much the same manner as previous bark beetle surveys. All forest areas below 7,000 feet accessible by road, lying between the Merced and Kings River were covered by roadside plots, road counts, and general reconnaissance. Seventeen roadside plots with 100 percent coverage included 4,500 acres in virgin timber and 2,300 acres in cut-over reserve stands. In addition a 100 percent ground cruise was made on a 320-acre plot (RS-9) in virgin pine type from which continuous loss records have been maintained since 1931.

The 1947 survey was conducted through the cooperation of State, National Forest and Bureau of Entomology and Plant Quarantine personnel. Those participating included D. F. Schlobohm, Technician of the State Division of Forestry; Messrs. Calvert and Michels of the Sierra National Forest; and the writer, in charge, from the Berkeley Forest Insect Laboratory, Bureau of Entomology and Plant Quarantine.

Bark Beetle infestations in ponderosa pine, principally by the western pine Beetle, Dendroctonus brevicomis, Lec. and the five-spined engraver beetle, Ips confusus, Lec. remained in low endemic status at all elevations above 4,000 feet. Both sugar pine and fir in the mixed conifer type were relatively free from infestations. Below this elevation, particularly in the lower ponderosa pine belt near the logging activity of small mills, there were localized killings of high intensity, primarily by Ips. Killings of this character were greatest in the vicinity of Jerseydale and Yosemite Oaks. Other Ips outbreaks occurred at Harris Ranch, Miami Mountain, Deadwood Peak, Fresno Flats, Thornberry Mountain, Cascadel, and Pine Ridge. They were somewhat more severe than in 1946, but may be expected to subside early in 1948 in a manner similar to past outbreaks in the vicinity of sporadic logging activity.

In the plot loss summaries (Tables 1 and 2) a three year comparison is made in virgin and cut-over reserve stands of the mixed conifer type, all above 4,000 feet in elevation. These summaries indicate: that (1) in virgin stands generally the loss trend has remained at an endemic level, with little tendency toward an increase, (2) slightly upward trends in western pine beetle activity occurred locally this year in Chiquito Basin and at Fence Meadow, (3) in cut-over reserve stands losses remained at a very low level, with the greatest kill in the Saginaw Basin-Hogue Ranch areas.

Red top counts in areas principally in the lower pine belt are summarized in Table 3. All heavy killings were localized in the vicinity of current logging operations where fresh slash material during spring and summer served as breeding sources for large populations of Ips adults which subsequently attacked timber reserves during late summer and fall.

No regular control work is recommended on the forest or in adjacent private lands except in the Bass Lake recreational area where annual maintenance (fell-peel-burn) has proven highly effective in keeping bark beetle losses to a minimum level. At Bass Lake, current infestations are confined to about 35 relatively small trees. Control work is not recommended in the lower pine belt against Ips outbreaks because of their temporary aggressiveness and close tie in with slash breeding.

The salvage of currently infested trees which are within easy access to mills should be encouraged. Areas of this type are located: (1) along the access road to the Fish Creek-Rock areas, particularly in Saginaw Basin and at Rogue Ranch; (2) in the Bass Lake area; (3) in the Fence Meadow area; (4) in privately owned lands.

TABLE I. MEASURED PINE LOSSES 1945-1947
IN VIRGIN PINE TYPE, SIERRA NATIONAL
FOREST, CALIFORNIA

Unit	Plot	Acres	Species	Trees Killed, 1945 (Complete Record) Number	Volume	BM/Ac	Trees Killed, 1946 (Complete Record) Number	Volume	BM/Ac	Trees Killed, 1947 (Partial Record) Number	Volume	BM/Ac
Bebeod Flat	RD-6	104	PP	53	25,390	244	8	2,650	25	---	---	---
			SP	2	3,740	36	1	5,740	55	---	---	---
			Total	55	29,130	280	5	8,390	80			
Fish Creek	RD-15	360	PP	3	6,480	18	6	9,240	28	7	1,240	3
			SP	1	1,800	5	1	7,290	20	--	--	--
			Total	4	8,280	23	7	16,530	48	7	1,240	3
Grizzley Meadow	RD-7	120	PP	--	---	---	1	4,240	35	--	--	--
			SP	2	16,920	141	3	10,080	84	--	--	--
			Total	2	16,920	141	4	14,320	119	--	--	--
Arnold Meadow	RD-8	176	PP	2	3,120	17	7	7,740	44	4	220	1
			SP	--	--	--	--	--	--	--	--	--
			JP	3	4,990	28	--	--	--	4	9,120	52
			Total	5	8,110	45	7	7,740	44	8	9,340	53
Jackass	RD-9	56	PP	2	4,810	86	--	--	--	1	1,950	33
			SP	--	--	--	--	--	--	--	--	--
			Total	2	4,810	86	--	--	--	1	1,950	33
Jackass	RS-9	320	PP	5	15,040	47	7	15,150	47	11	16,870	53
			SP	--	--	--	--	--	--	--	--	--
			Total	5	15,040	47	7	15,150	47	11	16,870	53
Summit Meadow	RD-10	232	PP	3	6,960	30	5	6,440	28	7	11,670	50
			SP	--	--	--	--	--	--	--	--	--
			JP	--	--	--	--	--	--	--	--	--
			Total	3	6,960	30	5	6,440	28	7	11,670	50
Stump Springs	RD-13	300	PP	4	7,060	23	2	4,400	15	1	580	2
			SP	--	--	--	3	6,520	22	1	5,010	17
			Total	4	7,060	23	5	10,920	37	2	5,590	19
Big Creek	RD-12	400	PP	3	12,400	31	2	6,580	16	--	--	--
			SP	2	800	2	3	8,400	21	3	1,320	5
			Total	5	13,200	33	5	14,980	37	3	1,920	5
Fence Meadow	RD-14	520	PP	4	3,030	6	17	38,570	74	5	39,410	76
			SP	3	9,100	18	5	10,370	20	1	3,820	7
			Total	7	12,130	24	22	48,940	94	6	43,230	83

2588 121,640 143,410

TABLE 2. MEASURED PINE LOSSES 1945-1947
IN CUTOVER RESERVE PINE TYPE

Unit	Plot	Acres	Species	Trees Killed 1945 (Complete Record) Number	Volume	BM/AC	Trees Killed 1946 (Complete Record) Number	Volume	BM/Ac	Trees Killed 1947 (Complete Record) Number	Volume	BM/Ac
Footman Ridge	RD-1	424	PP	4	9,750	23	6	2,510	6	4	4,350	10
			SP	3	450	1	--	--	--	--	--	--
			Total	7	10,200	24	6	2,510	6	4	4,350	10
Signal Ridge	RD-2	504	PP	--	--	--	--	--	--	--	--	--
			SP	2	7,560	15	--	--	--	--	--	--
			Total	2	7,560	15						
Redwood Creek	RD-3	256	PP	--	--	--	--	--	--	4	810	3
			SP	5	8,060	35	5	8,480	33	1	30	--
			Total	5	8,060	35	5	8,480	33	5	840	3
Kelty Meadows	RD-4	200	PP	--	--	--	--	--	--	--	--	--
			SP	2	4,000	20	--	--	--	--	--	--
Soquel	RD-5	120	PP	--	--	--	--	--	--	--	--	--
			SP	1	1,680	14	1	3,370	28	1	3,230	27
Saginaw	RD-15	384	PP	3	6,530	17	17	26,860	70	13	9,350	24
			SP	--	--	--	--	--	--	--	--	--
Pine Ridge	RD-11	392	PP	1	80	0.2	--	--	--	--	--	--
			SP	--	--	--	--	--	--	--	--	--

Table 3. Number of 1947 Beetle Killed Trees in Different Areas (Red Top Counts)

Locality	Acreage (Approx.)	Trees	Trees per Acre
Pine Ridge	160	150*	0.81
Blue Canyon	1,800	60	0.03
Patterson Mt.	2,000	101	0.05
Oak Flat-Fence Meadow	1,500	20	0.01
Dinkey Mt.	2,000	0	0.00
Bass Lake (East side)	2,000	18	0.009
Bass Lake (West side)	2,000	16	0.008
Cascadel	300	150*	0.50
Hugh Ryan (Lower)	400	40*	0.10
Cedarbrook	300	6	0.02
Norman's Mill	160	10	0.06
Miami Mountain	160	18	0.11
Deadwood Mountain	200	100*	0.50
Harris Ranch	320	35*	0.11
Footman Ridge. (West slope)	400	100*	0.25
Ferguson Ranch	600	2,000*	3.33
Bradshaw Mill	1,000	300*	0.30
Brookins' Mill	320	300*	0.93
Carter Mill	320	200*	0.62
Fresno Flats-Thornberry	800	150*	0.18
Tenford Ranch	400	75*	0.18

*Kill primarily by Ips confusus originating in logging slash.

Total number of trees killed by Ips in slash areas -- 3,600; Acreage-- 4,820; Trees per acre -- 0.74.

Total killed trees outside slash areas -- 249; Acreage -- 11,920; Trees per acre -- 0.020.